To: Daye, Richard[Daye.Richard@epa.gov]
From: Davis, Michael
Sent: Wed 9/3/2014 7:01:10 PM
Subject: FW: Request for assistance

Hey Mick:

Would appreciate any input you may have on this request for assistance.

Thanks - Mike

From: Hawkins, Andy
Sent: Thursday, August 28, 2014 9:06 AM
To: Davis, Michael
Cc: Daye, Richard; Jay, Michael
Subject: RE: Request for assistance

Mike, unfortunately I'm not a trained meteorologist (I'm an engineer) but here are my thoughts… note factoring in the high profile nature of this monitoring also, especially if you get a "hit"…

For a 1 hr averaging period it would likely be good to have collocated met towers with the monitors. I say this because in the past I've tried to do source apportionment for a 1hr standard and have seen a difference between met and concentrations associated with fronts etc. because of the difference in locations. In addition, I would suggest that you record the wind speed and directions at a frequency similar to the ASOS sites, so a 2min average reported every minute. You will potentially see differences in the wind directions though an hour that might be meaningful if you get a "hit" at a monitor. This answer also depends somewhat on how many sources of what is being monitor there is. For example if the pollutant monitored on an hourly basis could only come from 1 source then there is not likely a need to have a bunch of towers as you will know where it came from. For a 14 day averaging period I believe the existing NWS would be adequate. Note if the monitor is very close to the landfill (like station 1) might make sense not to have a tower there due to the cost and it's not likely to record much different speeds/directions than the tower at the landfill.

If cost is a concern you could initially compare the Landfill met data to the ASOS data (assuming you have time to do this) and see if you see differences that would provide some info on how representative the NWS data is near the Landfill and make a decision on the other met towers then.

I've also copied our trained meteorologist (Mick) who might have a different take on my suggestions. Also willing to meet and discuss this further as source/receptor distances, terrain, the river, pollutants, averaging periods, number of potential source contributors all potentially factor into this. Mick will have suggestions I'm sure.

FYI, Here is the ASOS format

http://www1.ncdc.noaa.gov/pub/data/documentlibrary/tddoc/td6405.pdf

Note this data would also be useful for potential dispersion modeling at a later date if needed for some reason.

Andy Hawkins

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From: Davis, Michael
Sent: Tuesday, August 26, 2014 3:30 PM
To: Hawkins, Andy
Subject: Request for assistance

Greetings Andy:

I could use some advice from a trained meteorologist.

The air monitoring network displayed below is currently operational in the vicinity of the Westlake Landfill, Bridgeton MO.

The purpose of this monitoring network is to detect, identify, and apportion air emissions that may be coming from the landfill.

The proposed monitoring regime includes multiple technologies for radiation, landfill gas, and VOCs with sample averaging and reporting times varying from 1-hour to 14 days at each of the five monitoring sites.

We would like to be able to make a definitive statement about where an air parcel or plume originated from at each of these monitoring stations in the event of an anomalous reading. Thus, the need for meteorological measurements. There is going to be a meteorological station on-site at the landfill operating at the time of construction.

There are numerous NWS and aviation forecasting (AWS/ASOS) stations in the vicinity of the Bridgeton area, specifically Lambert Airport. In addition, there are a number of mesonet and other privately operated meteorological stations available in the area from which wind speed and direction data can be obtained.

My question for you is would you consider the currently operating NWS / aviation / mesonet meteorological monitoring network sufficient to allow for source apportionment of resultant plumes from the landfill or would it be preferable to have meteorological stations operating and collecting concurrent data at each of the five air monitoring locations?

Please feel free to give me a call if you would like to discuss further.

Many thanks – Mike

Michael F. Davis

Laboratory Director

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Station 2 - Pattonville Fire Protection District Headquarters
Station 1 - Robertson Fire Protection District Station
Station 5 - St. Charles Fire Department Station 2
Station 4
Station 3 - Pattonville Fire Department